

REMARKS

Claims 1, 2 and 5-13 are currently pending in the present application. Claims 1 and 7 are independent in form. Claim 4 is canceled herein. Claims 1, 5, 6, and 7 are amended herein. No new matter will be entered by these amendments. Applicants respectfully request reconsideration of the application in view of the above amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 2, 4-10, 12 and 13 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 2,570,191 (“Beckwith”) in view of Japanese Publication No. 05-169906 (“Asaoka”). Claim 11 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Beckwith and Asaoka in view of U.S. Patent No. 5,175,665 (“Pegg”). Applicants respectfully submit that claims as amended are patentably distinct from the cited references.

Independent Claims

1. Independent claim 1 recites, an axle housing assembly capable of being supported by a vehicle’s base frame comprising: an axle housing having a differential housing and a cover attached to the differential housing, said differential housing having an integrally formed housing body and being provided with a pair of axle tubes fixed to said differential housing within said housing body; support means including ***a pair of axle brackets each having a ring portion wherein said pair of axle brackets are fitted on said pair of axle tubes*** adapted for mounting said axle housing to the base frame by coupling each axle bracket to the base frame ***wherein a thick portion projecting toward said housing body is formed on one of said pair of axle brackets such that the distal end of said thick portion is in contact with one of the left side***

brackets such that the distal end of said thick portion is in contact with one of the left side surface and the right side surface of a convex repulsive force receiving member; and said convex repulsive force receiving member provided on the body of said differential housing wherein a through hole is formed in parallel with the axle tubes for receiving a fastener for directly coupling the body of said differential housing integrally with an axle bracket, wherein said differential housing is substantially centered between said pair of axle brackets, and wherein said convex repulsive force receiving member is secured to only one of said pair of axle brackets by a repulsive force receiving bolt so that said body is supported by the base frame through the brackets. (emphasis added).

Independent claim 7 recites, an axle housing assembly capable of being supported by a vehicle's base frame comprising: an axle housing having a differential housing and a cover attached to the differential housing, said differential housing having an integrally formed housing body and being provided with a pair of axle tubes fixed to said differential housing within said housing body; ***support brackets each having a ring portion wherein said support brackets are fitted on said pair of axle tubes*** for supporting said axle housing on the base frame by coupling each axle bracket to the base frame; and a convex repulsive force receiving member extending generally vertically from the body of said differential housing wherein a through hole is formed in parallel with the axle tubes for receiving ***a fastener for coupling the body of said differential housing integrally with only one of said support brackets wherein a thick portion projecting toward said housing body is formed on one of said pair of axle brackets such that the distal end of said thick portion is in contact with the left side surface of the convex repulsive force receiving member, said fastener extending through said through hole and securing together***

the convex repulsive force receiving member and said one support bracket, wherein said differential housing is substantially centered between said support brackets.

On the other hand, Beckwith discloses a differential gear unit housing (17) and a pair of driving axels (5) each mounted in an axle housing (12), wherein each axle housing (12) has an integral gear reduction housing (13). (*See Beckwith, col. 3, lines 18-23*). Each of the gear reduction housings (13) has an annular flange (34) near its outer portion, to which a support bracket (C) is attached with a plurality of bolts (35). (*See Beckwith, col. 4, lines 49-52*). Each support bracket (C) is comprised of a front section (28) and a rear section (29). (*See Beckwith, col. 4, lines 34-36*) The bolts (35) are not only used to attach the gear reduction housings (13) to the support brackets (C); bolts (35) are used to rigidly and substantially connect the front section (28) and the rear section (29) of each support bracket (C). (*See Beckwith, col. 4, lines 64-70*).

The support brackets (C) disclosed by Beckwith have an entirely different structure than the claimed axle brackets. Beckman's support brackets (C) are comprised of front section (28) and rear section (29), which are rigidly attached by bolts (35) to the gear reduction housings (13). Beckman's support brackets (C) fail to have "a ring portion." Moreover, Beckman's support brackets (C) are fixed, not fitted, to the gear reduction housings (13) That is, Beckman's support brackets (C) fail to have "*a ring portion* wherein said pair of axle brackets are *fitted* on said pair of axle tubes" as required by independent claim 1. (emphasis added)

Similarly, independent claim 7 requires a pair of axle tubes and "*support brackets each having a ring portion wherein said support brackets are fitted on said pair of axle tubes* for supporting said axle housing on the base frame by coupling each axle bracket to the base frame." (emphasis added)

Further, as the Examiner concedes, Beckwith does not disclose the repulsive force-receiving member having a thick portion projecting toward the housing body such that the distal end of the thick portion is in contact with one of the left side surface and the right side surface of the convex repulsive force-receiving member for directly coupling the body of the housing to the axle bracket. (See December 29, 2004 Office Action, p. 3).

Asaoka fails to cure the deficiencies of Beckwith. The Examiner asserts that, “Asaoka discloses a repulsive force receiving [member] having a thick portion (top portion of 3) projecting toward the housing body such that the distal end of the thick portion is in contact with one of the left side surface and the right side surface of the convex repulsive force receiving member (since no frame of reference has been established, any direction can be considered left or right) for directly coupling the body of the housing to the axle bracket (see Fig 1).” (See December 29, 2004 Office Action, p. 3). Applicants respectfully disagree with the Examiner’s characterization of Asaoka.

Asaoka discloses an axle housing comprising a pair of housing ends (1) connected to both ends of a differential housing (2) and a pair of axles brackets (3) fitted to the outer circumferences of the housing ends (1), wherein each housing end (1) has a projected flange part (11) that is held between one of the axle brackets (3) and the differential housing (2). (See Asaoka, Abstract).

Since Asaoka’s axle brackets (3) abut directly against the differential housing (2), there is no thick portion projecting toward the differential housing (2). That is, as shown in FIG. 3, the body section (31) of the bracket (3), which fits against the differential housing (2), appears to be flat and has no projections. Thus, Asaoka cannot be fairly said to teach “a thick portion

projecting toward the housing body” as required by independent claims 1 and 7. (emphasis added)

Moreover, each of Asaoka’s axle brackets (3) are connected to the differential housing (2). The axle housing recited in claim 1 requires that “said convex repulsive force receiving member is secured to ***only one*** of said pair of axle brackets by a repulsive force receiving bolt.” (emphasis added) Similarly, independent claim 7 requires “a fastener for coupling the body of said differential housing integrally with ***only one*** of said support brackets.”

Applicant’s claimed axle housing advantageously allows the axle housing to be assembled without an accurate adjustment of the distance between the pairs of axle brackets, because the differential housing is secured to only one of the axle brackets.

Thus, the combination of Beckwith and Asaoka fails to disclose each and every limitation of independent claims 1 and 7.

2. Further, there is no motivation to combine the teachings of Beckwith and Asaoka. Beckwith discloses a differential gear unit housing (17) and a pair of driving axels (5) each mounted in an axle housing (12), wherein each axle housing (12) has an ***integral*** gear reduction housing (13). (emphasis added) (*See* Beckwith, col. 3, lines 18-23). As shown in FIG. 3, each gear reduction housing (13) is rigidly attached to the gear unit housing (17) with a plurality of bolts (14). (*See* Beckwith, col. 3, lines 26-34). Bolts (35) rigidly attach the gear reduction housings (13) to the support brackets (C) and also rigidly and substantially connect the front sections (28) and the rear sections (29) of the support brackets (C). (*See* Beckwith, col. 4, lines 64-70).

That is, in Beckman's system, the differential gear unit housing (17) is rigidly attached to the gear reduction housings (13), which are rigidly attached to the support brackets (C). When a torque is applied to one of driving axels (5) during breaking or accelerating, the differential gear unit housing (17) is prevented from rotating, because it is rigidly attached to the support brackets (C) through the gear reduction housings (13). Accordingly, in Beckman's system there is no need to directly couple the support brackets (C) to the differential gear unit housing (17). Thus, one of ordinary skill in the art would not have been motivated to look to the teachings of Asaoka to fasten one or both of Beckman's support brackets (C) directly to the differential gear unit housing (17).

In summary, there is no motivation to combine the teachings of Beckwith and Asaoka. Even if properly combined, when each reference is taken as a whole, the combination of Beckwith and Asaoka does not disclose, teach or suggest each and every claim limitation of independent claims 1 and 7. Accordingly, Applicants respectfully request withdrawal of the rejection applied to claims 1 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Beckwith in view of Asaoka.

Dependent Claims

3. Applicants do not believe it necessary at this time to address the rejections of the dependent claims as Applicants believe that the foregoing places the independent claims in condition for allowance. Applicants, however, reserve the right to address those rejections in the future should such a response be deemed necessary and appropriate.

CONCLUSION

Based on the foregoing amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the rejection of claims and allowance of this application.

AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 5000-4679. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 5000-4679. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

Respectfully submitted,
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